Recipes for cooking a successful paper

Preparation of a manuscript for a peer-reviewed international journal

Lecture 4: Submission and revision

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Some Important Points by Terry Healy

- The purpose of a research paper is to communicate new original knowledge
  - New concepts
  - New data
  - New interpretations

- Clarity of expression follows clarity of thought.
  - First sketch out the ideas you want to express.
  - Then write it as simply as possible.
  - Use "topic" sentences and phrases.

The meaning of references

- A study relies in part upon the work of others
- Authors are required to identify their sources of information == cite references
- Not only to credit where it is due
  - But also to provide the reader the access to these
- Authors’ ethics: External material MUST be identified wherever used
  - But to insert full documentation is distracting and cumbersome
- A solution: references

Various systems

- Number system
  - Text citation: "As highlighted in [1], ...
  - Reference list: [1] Johnson, D. 2001...
  - Various appearances: (1), [1], superscript, etc.
  - Preferable in letter-type journals; saves space
  - Estonian Journal of Engineering, Physics of Fluids...

- Author-date
  - Text citation: "... found in (Beckers, 2003)"
  - So that the reader can find it unambiguously
  - Reference list: alphabetical Beckers, J.-M. 2003...
  - Gives much more information about the source
  - Sources can be easily added or deleted

Referencing

- Do not cite unless you have ‘sighted’ a reference
  - Check carefully the publication data
  - Demonstrate knowledge of the authoritative international literature
  - Avoid long lists of 10-20 authors in the text
    - => laziness
    - => you haven’t really read them all
    - Integrate references into the text

Integration of references: more art than science

There are an increasing number of studies into [...] such as suspended matter (Graewe and Wolff, 2010, fish eggs and larvae (Mariani et al., 2010) or turtle hatchlings (Monzon-Argullo et al., 2010) or different adverse impacts such as oil (Korotenko et al., 2004), microorganisms (Korajkic et al., 2009) or marine litter (Yoon et al., 2010). The majority of the relevant research addresses the direct problem of current-induced propagation of passive tracers (e.g. Korotenko et al., 2010). The studies cover a wide range of applications, from a verification of the classical circulation models beyond that offered in a Eulerian assessment (Ohmann and Mitarai, 2010) up to intricate statistical models of oil spill propagation based on a large number of propagation scenarios (Abascal et al., 2010) and coastal risk evaluation systems based on simulating the transport of underlying contaminant or toxic algae (Christians and Callies, 2009; Havens et al., 2010).
The largest concentration of citations

1. Introduction
   - Description of the scope, content, etc.,

2. Material and methods
   - All used techniques and solutions

3. Discussion
   - Showing the results in the proper context

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Bibliography: List of References

- Follow journal format exactly!
- Study the format carefully – each journal is different
- EndNote may help – but frequently does not

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Procedure

1. Decide on the message
2. Decide on a journal
   - Download instructions
3. Develop the story
4. Write Material/Methods
   - Start the reference list
5. Summarise results
   - Create figures
   - Create tables
6. Write Introduction and Discussion
7. Finalise the references
8. Assemble/order the tables and figures (in numerical order)
9. Select a tentative title
10. Write the abstract
11. Revise the entire draft
12. Sleep on it
13. Revise the manuscript
   - Repeat (12)-(13)
14. Get approval of all authors
15. Re-read the MS
   - Improve sentence structure
   - Improve word choice
   - Correct typos
16. Ask colleagues to read MS
17. Have the text polished by a native speaker
18. Submit the manuscript

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Summary of preparing II: Title

- Choose a title that will attract the reader’s interest
- Use the fewest possible words
  - But stay adequate
- Be specific
- Avoid abbreviations
- Be “topical”: put important terms at the beginning

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Summary of preparing the entire manuscript I

- The motto of scientific writing: brevity & clarity
  - To provide maximum information
  - with minimum words
  - In well-organised manner
- It is now time to complete the full manuscript
Summary of preparing III: Authors and affiliations

- Include all those and only those who have significantly contributed
- List order: depends on the role and contribution
- List affiliations and addresses of all authors
  - Look once more into instructions of the journal
  - It is very boring for the Editor to ask for additional information
- List the corresponding author and his/her full coordinates

Summary of preparing IV: Abstract

- Usually <one double-spaced page
- 150-250 words
- Avoid citing references
  - Cite only if the referee or Editor recommends so
- Objective and scope
  - Informative for research papers
  - Indicative for reviews, conference reports etc.
- Methodology: brief
- Summary of results & conclusions (1-2 sentences)

Summary of preparing V: Key words

- Used to properly place your research
- Reflect fields of research, not results
  - Coastal processes, wave modelling, erosion, accumulation, longshore transport, Baltic Sea, Gulf of Riga.
- Priority: words that are not part of the title

Summary of preparing VI: Introduction

- Contains information that should be read first
  - To understand and properly position the text
  - Provide the educated reader with specific facts
- Typically includes
  - Nature and scope of the problem
  - Important literature
  - Methods: briefly on the very basic level
  - Recent findings and theories on the problem
  - Maybe: principal results (on the very basic level)

Summary of preparing VII: Material and Methods

- Describe and justify your approach
- Provide sufficient detail for a competent reader to repeat the study
- Do NOT include results (except in a methodology paper)
- The reviewers will use this section to judge the validity of your approach

Summary of preparing VIII: Results

- The meat of the paper
  - Presenting the findings in text, illustrations, tables
  - Need not to be lengthy
  - Do NOT describe methodology (again)
  - Report significant results only
- Avoid redundancy
  - Do NOT duplicate images/text
  - Do NOT include the same data into images and tables
  - Do NOT repeat the legend/title in the text
- Enumerate and cite/mention all figures and tables
  - Details/text in images must be readable after reduction by the printer
Summary of preparing IX: Discussion

- Usually the most challenging section to write
  - It is NOT a recapitulation of results
  - The value: your interpretation of the findings
  - Do NOT introduce new results
  - Present the principles, relationships, generalizations of findings from the Results section
  - Point out: any exceptions, any lack of (otherwise expected) correlation
  - Define unsettled points
  - Avoid focusing on trivial details
  - Show how your results agree/disagree with published work
  - Discuss implications and possible applications
  - State your conclusions; summarize your evidence

Summary of preparing X: Back matter

- Follows the text
- List resources that were not part of the research but nonetheless contributed:
  - Research contributions, sources of funding, references
- Acknowledgement
  - Credit those who have made research or financial contributions
  - Mention individuals and institutions/entities who have supported
- References
  - Cite only significant published references
  - Follow strictly journal’s instructions for documentation
  - Appendices (if necessary)

Assemble the manuscript: classical rules

- Title page
- Abstract, key words
- Body text
  - Introduction, M&M, Results, Discussion, Acknowledgements
- References
- Tables
- Figure captions
- Figures
  - (captions may re-appear)
- Typically each section begins on a new page
- Number pages consecutively
- Use line numbers to help the referees and editor
- Use spellers!
- Proofread
  - The substance was coal
  - The substance was cool
  - To assess vs. To asses

Submission

- Usually electronic
  - Make clear that you have all the components
  - In required format
    - Typical: Word, pdf, LaTex, images: eps, tiff, jpg
    - Images imported into Word document only accepted at review phase
    - Word2007 frequently not accepted
    - Excel or Word drawings frequently discouraged
  - Compile a list of potential referees
  - Those you think may understand & be interested in your results
  - Not close friends
  - Normally among those you cite
- Classical style: Cover letter
- Modern style: Highlights

Cover letter

- Start with a standard phrase
  - Dear Dr. Smith:
    - Please find attached a manuscript entitled: "Analysis of Zircons in Paleo-Tidal Deposits of the Changjiang Delta" by J. Zhang and X. Su, which we would like to submit for publication in the Journal of Irreproducible Results.
  - Tell the Editor why (you think) this paper is important
    - Required for many top-level journals
    - Express why your results deserve publication or why they are attractive to other scientists
    - What is new/unexpected/key development
    - Just 1 point!
- Tell the Editor why (you think) this paper is important
  - A highly interesting feature is that the switching time from winter-type to summer-type circulation that occurred a few weeks earlier in the 1960s-1990s than in the 1950s has moved back to later time since the mid-1990s. This may lead to substantial changes of the trends (or even to reverse of their sign) for many local meteorological and climatological variables. Together with the recently established considerable increase of the persistence of circulation types this shifts may be responsible for several local climatic extremes. We believe that our paper will launch a series of studies of the reverse shift and its potential consequences
- Suggest potential reviewers
  - If it is acceptable to you, we would like to suggest the following as referees with expertise and experience in the field:
    - Note: Include full address, email address and telephone number of the potential referees.
    - Do not contact the colleagues that you nominate.
  - Confirmation that the manuscript is original and not submitted to any other journal or publisher
Highlights

- 3-5 major points expressed very shortly
- Max. 85 characters each
- Present the most important results/conclusions in a compressed, bulleted-point manner
- Should not contain Material or Methods information; just what has achieved
- No debatable issues; no speculations; just proved/established facts

Highlights: a poor example

1) We used wave model WAM to study fetch-limited wave growth from irregular shoreline.
   - Definitely not a highlight
2) We studied several combinations of shoreline description, resolution and wind forcing.
   - So what, this has been done by 100s of scientists
3) Model results were compared against measurements made in the Bothnian Sea in 1976.
   - At least something about the result
4) None of the used combinations were able to predict the observed wave growth.
   - Actually a well-know feature since the 1980s
5) Close to the shoreline the effect of resolution on the wave growth was fairly large.

Highlights: a better example

- WW3 results show swells propagating from the Atlantic Ocean into north Indian Ocean
  - Interesting: propagation "behind a corner"
- These swells propagated only in the Bay of Bengal and not in the Arabian Sea
  - Also interesting and worth of mentioning
- Swells of Hs=15m generated by a cyclone in 2007 reduced to 6m in the Reunion Islands
  - Acceptable but clearly less interesting
- When winds are weak during pre-monsoon, swells from south Indian Ocean dominate
  - Acceptable

Upload: also nontrivial

- For review: usually manuscript alone is OK
- Check carefully what you need for submission
- Typically a user account
- In electronic systems:
  - check whether the resulting file (usually pdf) is correct
  - Do not forget to push "Submit" button or (Finalize)
- Download and send the resulting pdf file to all co-authors
- Cross your fingers and wait

Now the review process starts

- The biggest problem with most journals is that the review process is slow and inefficient.
  - This is because the reviewers are not rewarded for their work, or evaluated on their performance.
- The Editor selects 2-3 reviewers
  - They check carefully
  - the manuscript
  - The rules of the journal
  - Usually also some cited / previous work
- Outcome: a referee’s report
- Based on these reports and his/her own impression, the Editor makes a decision

The questions asked from the reviewer:

1. Overall evaluation:
   - Paper
     - of general importance
     - important in the field
   - very specialised
   -

2. Problem statement
   - clear
   - needs extension
   - not clear
   - inadequate

4. Interpretation of results
   - adequate
   - suffers from important omission
   - inadequate
   - suffers from loose generalising
   - not understandable
More questions asked from the reviewer:

<table>
<thead>
<tr>
<th>II. Technical side:</th>
<th>Presentation and style</th>
</tr>
</thead>
<tbody>
<tr>
<td>S. Title</td>
<td>□ adequately descriptive  □ corresponds to the text  □ should be changed</td>
</tr>
<tr>
<td>Abstract</td>
<td>□ clear and adequate  □ needs linguistic revision  □ needs substantial revision</td>
</tr>
<tr>
<td>Language</td>
<td>□ grammatically good  □ needs essential / slight revision  □ reject</td>
</tr>
<tr>
<td>Illustrations, tables</td>
<td>□ adequate  □ fig./ table _ need alteration  □ figure quality acceptable  □ fig./ table _ may be omitted</td>
</tr>
<tr>
<td>References</td>
<td>□ adequate  □ inadequate  □ incomplete</td>
</tr>
</tbody>
</table>

Check Points on ms Quality: the points that the reviewers will check (after Hingi and Godt, 2006):

- You have carefully and systematically studied the work of colleagues and referred to it
- You have critically evaluated your methods/results versus the state-of-the-art findings
- You have tested the performance of your technique using multiple case studies / experiments
- You do not actually know what has been published by others on this topic
- You are sure that your technique is optimal and that there is no better alternative
- You do not actually know if you will get the same results under various conditions
- You make significant claims, but these are backed up by strong arguments
- You have considered what implications of this work are and how these ideas/discoveries can be used to solve real-life problems
- You have adjusted your style and jargon to the target audience
- You do not want to make significant claims or you are making them without sufficient proof
- You do not actually know how your technique can be applied to solve real-life problems and what the implications of your findings are
- You have not previously tried to communicate your ideas/results to the targeted research group

After the Peer Review

- ms is returned to first listed author for:
  - Accept as is (very infrequent)
  - Minor revisions
  - Major revisions: a few potentially important omissions (the most frequent)
  - Major revisions and re-write, or
  - Rejected
- Normally editors require authors to follow reviewers recommendations
- Author may argue to editor against misunderstanding or bias by reviewer
- Remember: Ultimately it is YOUR paper

Final questions asked from the reviewer:

<table>
<thead>
<tr>
<th>III. Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper is</td>
</tr>
</tbody>
</table>

12. This manuscript
- □ deserves ordinal / urgent publication
- □ is acceptable after revision (re-review required / not required)
- □ is not acceptable
- □ needs additional refereeing

Standard layout of a review

- A remark on the scope, key developments, whether or not it is important, the overall feeling of the referee
  - No need to answer in detail
- Major comments and critics (missed points, potentially important shortages, misinterpretations)
  - To be answered point-by-point, normally require larger changes in the manuscript (few paragraphs)
  - Minor comments (typos, small missed points, missing or redundant items)
  - Normally small modifications (<1-2 lines); to be answered/rebutted only you strongly disagree
An example of general remarks

- The authors describe in their paper [...] a rather novel method to quantify the surface divergence. This is indicated by using discrete particles and a particle-tracking model. From the change in area covered by a set of particles in comparison to the circumference a measure is derived to quantify the compressibility. This method is applied to surface current fields in the Gulf of Finland (GOF). The analysis is done for the year 1991.

Minor remarks: also very helpful

- L 307 What does "really close to zero" mean and what is your reference to judge it?

- L 316 I think you mean Fig. 4.

- L 321 I think the river Kymi is located in the NE part of GOF.

Thank the referees! They have (usually) deserved it.

- We highly appreciate the overall positive attitude of both referees to our manuscript and gratefully acknowledge their detailed and uncompromising but still friendly and very constructive comments and suggestions.

- The remarks greatly helped us to put the entire presentation into a more proper context and to identify and remove several inconsistencies, and to express more clearly the background of a few debatable items in the text.

Major comments: example

- [...] the authors miss some points. Moreover, the methods section should be carefully revised. The authors should additionally show how their method compares to the classical computation of the surface divergence or the vertical velocity field. This gives an idea on the advantages or disadvantages of the proposed method and how well the different methods correlate.

- Necessary revisions may involve 2-3 pages, and inclusion of substantial amount of material.

Most manuscripts need some modification

- Consider ALL comments as helpful
  - Even if they are nasty or not fair:
  - You have probably failed to explain some point(s)

- Long referee’s reports contain numerous advice

- Answer every comment in detail
  - Thank referees for their efforts (they do it for free)
  - Usually agree and rewrite/reformulate
  - Disagree only if you are 100% convinced that your point is correct
  - Create a detailed answer & list of corrections
  - Mark corrections in the manuscript e.g. with a color
  - Use direct and personal attacks for your own benefit

Referees’s comments

- Recognise where are your systematic violations of grammar and/or style
  - It is possible to learn good English
  - Check from textbooks, dictionaries
  - Create a glossary of items where you failed

- Typical Estonian/German errors
  - Change X, decrease Y, increase Z, etc.
  - Should be: change in, decrease in, increase in
  - Except for very few special cases
If you do not agree: explain in great detail why; and still modify the manuscript

- Here we are of different opinion. As we explain in the text, the largest contribution to this feature stems from ignoring of spreading caused by subgrid-scale processes. In the absence of spreading, trajectories of initially closely located particles tend to stay together. Therefore, there is a tendency that a whole bunch of trajectories that start from a specific grid cell either all touch nearshore, or none of them enters the nearshore. As we release the particles only into every fourth cell (just to keep the computational cost reasonable), this feature becomes evident in very contrast manner in maps for single simulations. This is the reason why the developers of this technique recommend using a large pool of simulations starting from different time instants (Soomere et al. 2010; Andrejev et al. 2011). We have reformulated the paragraph in order to make this more clear. We have also added relevant explanations into the discussion section.

After the Peer Review (cont.)

- Manuscript revised and returned for processing
- May take 2 years to appear as a fully published article

- So its time to start on the next ms!

Proofs: the last option to correct mistakes

- Read with great care
  - estuarine circulation forced by tidal flow for which it is well known that in such cases the surface flow often exhibits a tendency to converge (Nunes and Simpson 1985) therefore Lagrangian particles coverage as well.
  - Check every single symbol (even spaces etc.)
  - Check once more references (page numbers etc)
  - Create a list of corrections, showing exactly what and how should be changed
    - Line 582: please replace “about 5 to 27 days” by “about 5 to 14–16 days” to match the data in Fig. 9
    - line 671: please insert space after Basin
    - line 732, Question 5: please replace 2011 by 2010
    - line 800: please correct Raynard to Raynoud
    - line 825: please correct Delhez to Delhez

The paper has been printed

- Send reprints to colleagues
- NB! Write a polite cover letter
  - Formulate the main point
  - Don’t force colleagues to read your paper
  - Ask advice from leaders in the field
  - Not about the particular paper
  - But whether or not the topic is important

Establish:
  - your own web site
  - Early drafts of the ms can be posted there
  - make summary brochures,
  - mount poster displays.
  - All assist to promote your status as an expert researcher.

Mark corrections/changes in the text

- Observations, measurements and modelling of wave fields in the Baltic Sea basin go back for many decades (Schmager et al., 2008; Weisse and von Storch, 2010).

Personal attacks can be used for your benefit: showing (very politely) that the referee has been biased:

- Why don’t you call it simply “surface divergence”, this is what you are computing. JMS is an oceanographic journal and not Physical Review Letters.

(surface divergence was a very particular case of what was computed; and PRL is a dream publishing place for many oceanographers – but a few are accepted there)